Geometry 2-6 Practice B

1. Given
2. Def. of mdpt.
3. Def. of $\cong$ segments
4. Seg. Add. Post.
5. Subst.
6. Given
7. Mult. Prop. of $=$
8. Subst. Prop. of $=$
9. Def. of $\cong$ segments
10.

Statements	Reasons
1. a. $\angle HKJ$ is a straight angle.	1. Given
2. $m\angle HKJ = 180°$	2. b. Def. of straright $\angle$
3. c. $\overrightarrow{KI}$ bisects $\angle HKJ$	3. Given
4. $\angle IKJ \cong \angle IKH$	4. Def. of $\angle$ bisector
5. $m\angle IKJ = m\angle IKH$	5. Def. of $\cong$ $\angle$s
6. d. $m\angle IKJ + m\angle IKH = m\angle HKJ$	6. $\angle$ Add. Post.
7. $2m\angle IKJ = 180°$	7. e. Subst. (Steps 2, 5, 6)
8. $m\angle IKJ = 90°$	8. Div. Prop. of $=$
9. $\angle IKJ$ is a right angle.	9. f. Def. of right $\angle$

2-6 Practice C

1.

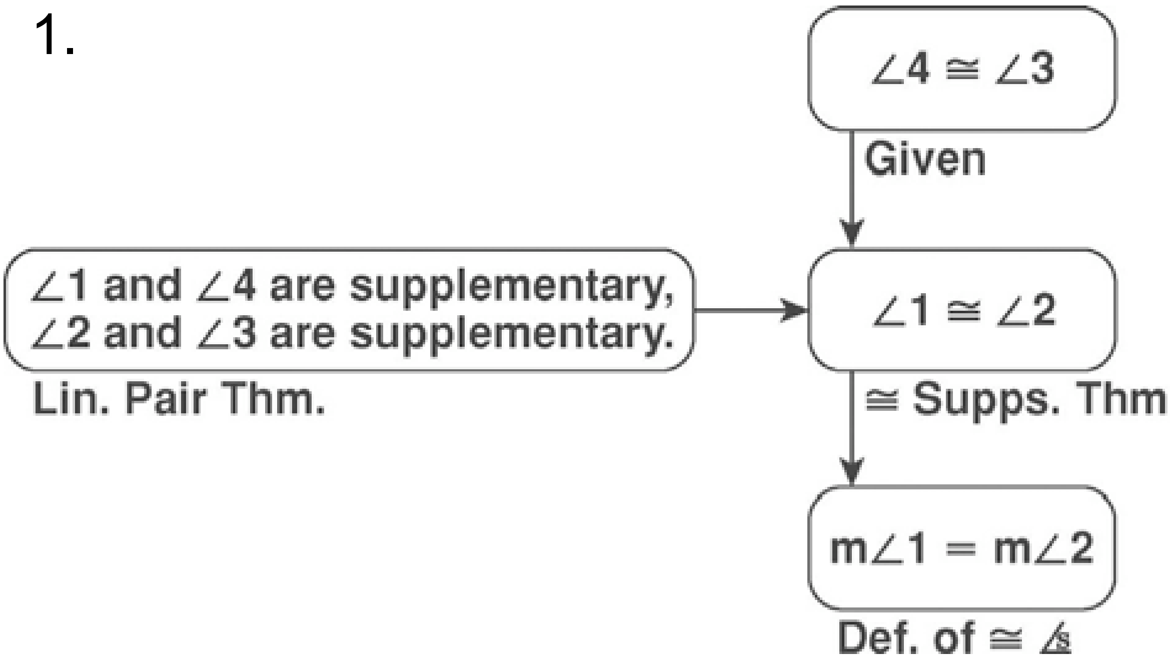
Statements	Reasons
1. $m\angle 2 + m\angle 3 + m\angle 4 = 180^\circ$	1. Given
2. $\angle 1$ and $\angle 2$ are supplementary.	2. Linear Pair Thm.
3. $m\angle 1 + m\angle 2 = 180^\circ$	3. Def. of supp. $\angle$s
4. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3\ m\angle 4$	4. Subst. Prop. of =
5. $m\angle 1 = m\angle 3 + m\angle 4$	5. Subtr. Prop. of =

2. Possible answer:

Statements	Reasons
1. $\angle 1$ is a right angle.	1. Given
2. $\angle 1$ and $\angle 2$, $\angle 1$ and $\angle 4$, $\angle 2$ and $\angle 3$ are supplementary.	2. Linear Pair Thm.
3. $\angle 1 \cong \angle 3$	3. Congruent Supps. Thm.
4. $\angle 3$ is a right angle.	4. Rt. $\angle \cong$ Thm.
5. $m\angle 1 + m\angle 2 = 180^\circ$, $m\angle 1 + m\angle 4 = 180^\circ$	5. Def. of supp. $\angle$s
6. $m\angle 1 = 90^\circ$	6. Def. of rt. $\angle$
7. $90^\circ + m\angle 2 = 180^\circ$, $90^\circ + m\angle 4 = 180^\circ$	7. Subst.
8. $m\angle 2 = 90^\circ$, $m\angle 4 = 90^\circ$	8. Subtr. Prop. of =
9. $\angle 2$ and $\angle 4$ are right angles.	9. Def. of rt. $\angle$

2-7 Practice B

1.

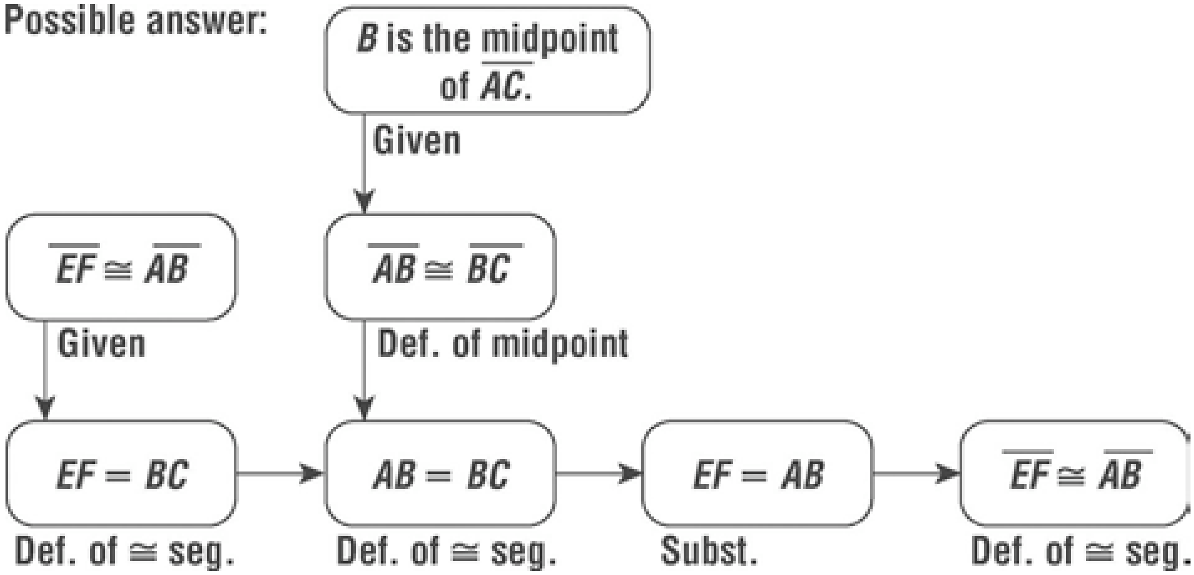


2. It is given that $AB = CD$ and $BC = DE$, so by the Addition Property of Equality, $AB + BC = CD + DE$. But by the Segment Addition Postulate, $AB + BC = AC$ and $CD + DE = CE$. Therefore substitution yields $AC = CE$. By the definition of congruent segments, $\overline{AC} \cong \overline{CE}$ and thus C is the midpoint of $\overline{AE}$ by the definition of midpoint.

2-7 Challenge

1.

Possible answer:



2.

Possible answer: